

(a) providing a transalkylation reaction zone containing a transalkylation catalyst comprising a high porosity zeolite-Y molecular sieve having a silica/alumina ratio within the range of 2-5, a pore size greater than 7 and up to about 8 Angstroms, and a surface area of no more than 500 m²/g;⁷³⁵⁰

(b) supplying a polyalkylated aromatic component comprising polyalkyl benzenes in which the predominant alkyl substituents contain from 2 to 4 carbon atoms to said transalkylation reaction zone;

(c) supplying benzene to said transalkylation reaction zone;

(d) operating said transalkylation reaction zone under temperature and pressure conditions to maintain said polyalkylated aromatic component in a liquid phase and effective to cause disproportionation of said polyalkylated aromatic component to arrive at a disproportionation product having a reduced polyalkyl benzene content and an enhanced mono-alkyl benzene content; [and]

(e) recovering said disproportionation product from said transalkylation zone;

(f) supplying a feedstock containing benzene and a C₂-C₄ alkylating agent to an alkylation reaction zone containing a molecular sieve aromatic alkylation catalyst having an average pore size which is less than the average pore size of said high porosity zeolite-Y;

(g) operating said alkylation reaction zone to produce an alkylated product comprising a mixture of mono-alkylated and poly-alkylated aromatic components and benzene by said alkylating agent in the presence of said molecular sieve alkylation catalyst; and

(h) supplying the alkylation product from said alkylation reaction zone to an intermediate recovery zone for the separation and recovery of mono-alkylbenzene from the alkylation product and for the separation and recovery of a polyalkylated aromatic component.